

Chicago's Protected Bike Lane Initiative

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Michigan Traffic Safety Summit

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Agenda

- Chicago's Bike Renaissance
- Design Considerations by Bikeway Type
- Chicago's Streets for Cycling Plan 2020
- Project Examples – Successes and Lessons Learned



Bikeway Planning in Chicago – Pre 2011



Prior to 2011...

- 2001 – best big city for bicycling
- ~1% of work trips by bike
- Emphasis on bike lanes and marked shared lanes

Bikeway Planning in Chicago – Pre 2011



- Bikes and Peds get leftover space

- We simply ignore their needs altogether, pretending they don't exist



Public Safety Problem

Local 7

Woman charged in car crash that kills toddler

Sunday, September 04, 2011



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September 4, 2011 (CHICAGO) (WLS) -- Police have charged a driver who ran over a 2-year-old girl and her grandmother.

ADVERT

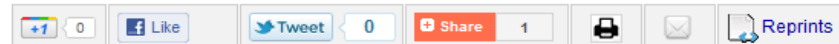


Share



Bicyclist killed in hit-and-run, driver arrested

SUN-TIMES MEDIA WIRE August 23, 2011 5:10AM



Updated: August 23, 2011 5:12AM

A man riding his bike to meet friends was struck and killed in a hit-and-run accident in the Southwest Side Pilsen neighborhood early Tuesday, police said. Officers caught up with the driver and arrested him.

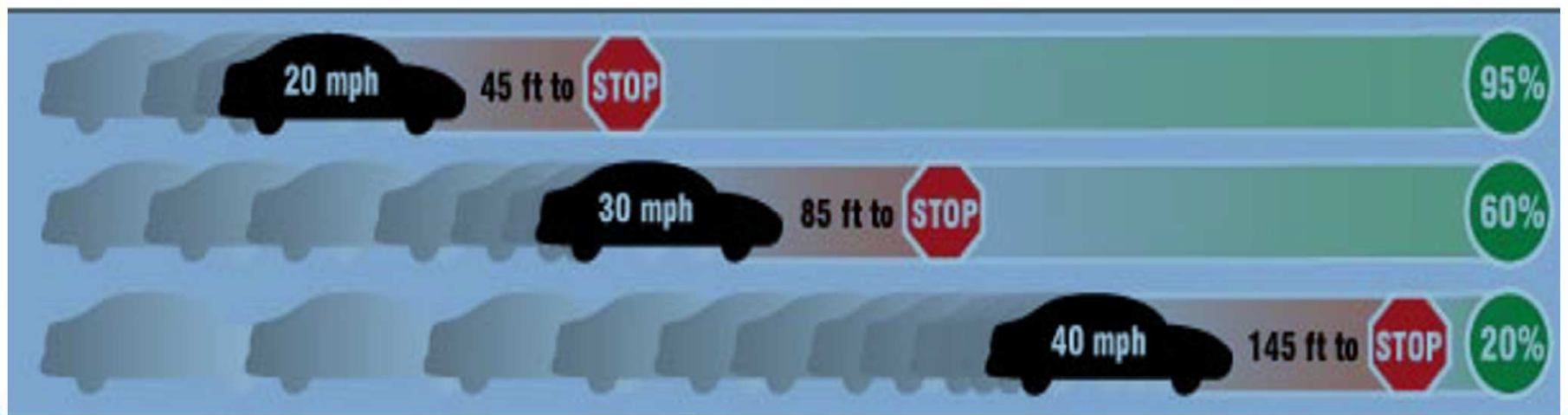
Bicyclist killed by semitrailer while swerving to avoid car door

As Chicago has tried to transform into a bike-friendly city, advocates say more work is needed to keep cyclists safe

Public Safety Problem

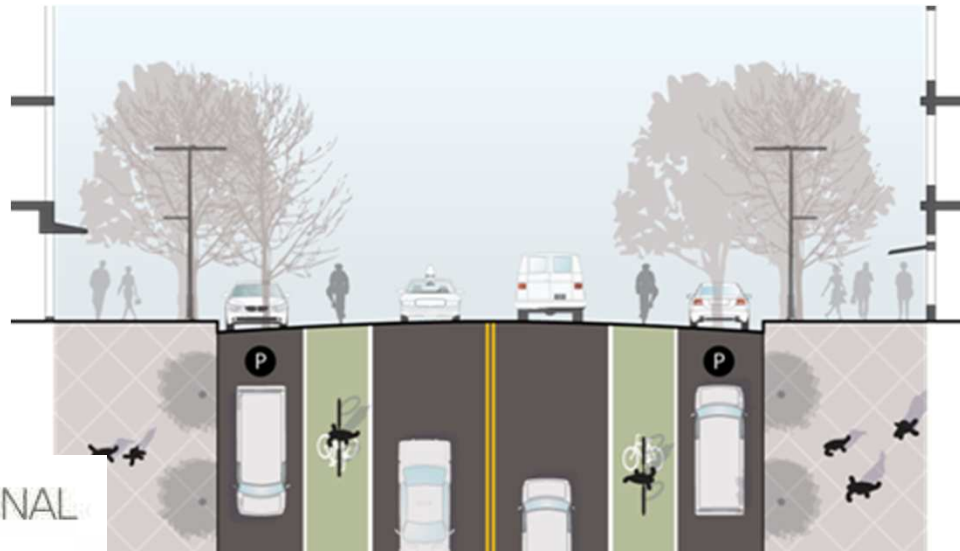
- Chicago 163rd out of 200 cities for safety
- Over 130,000 crashes per year involving autos
- Approximately 1,500 crashes involving bicyclists each year
- More than 3,000 crashes involving pedestrians each year
- Speeding is a major concern
- An unsafe city won't attract families, businesses, young talent...

Pedestrian fatalities increase dramatically as vehicle speed increase.



Complete Streets Policy

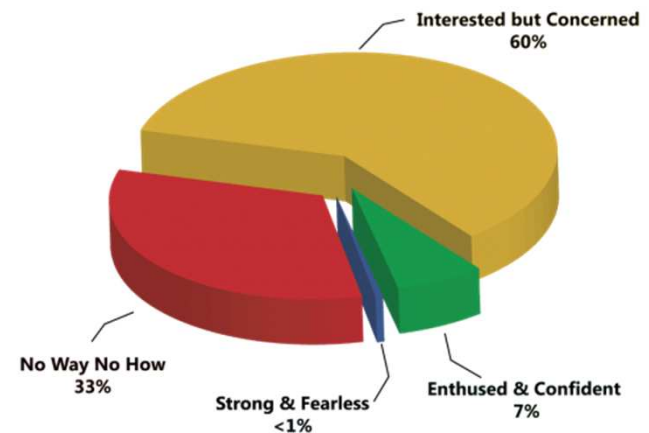
The **safety** and convenience of **all users** of the transportation system, including pedestrians, bicyclists, transit users, freight, and motor vehicle drivers shall be accommodated and **balanced** in all types of transportation and development projects and through **all phases** of a project so that **even the most vulnerable** – children, elderly, and persons with disabilities – **can travel safely** within the public right of way.



Chicago's Bike Renaissance

Mayor Emanuel's Transition Report – May 2011

- Improve street safety by reducing fatalities and crashes
- Build 100 miles of protected bike lanes
- Build bikeways that are comfortable for all ages and abilities
- Introduce a citywide bike share system



Four Types of Cyclists

Chicago's Bike Renaissance



From 2011 on...

- Emphasis on cycle tracks and buffered bike lanes
- Goal of 5% of work trips by bicycle

Design Guidance

- Little guidance from USDOT, AASHTO, FHWA
- NACTO Urban Bikeway Design Guide (UBDG)
- Engineering judgment / trial and error



Cycle Tracks



Cycle Tracks



18th Street



Jackson Boulevard



Elston Avenue



Lake Street

Safety for All Roadway Users

NYC Cycle Tracks

- Injury crashes to all street users down 56%

Montreal Cycle Tracks

- 28% reduction in injury on streets with cycle tracks vs. those without
- Preferred by women, children and seniors

DC Cycle Tracks

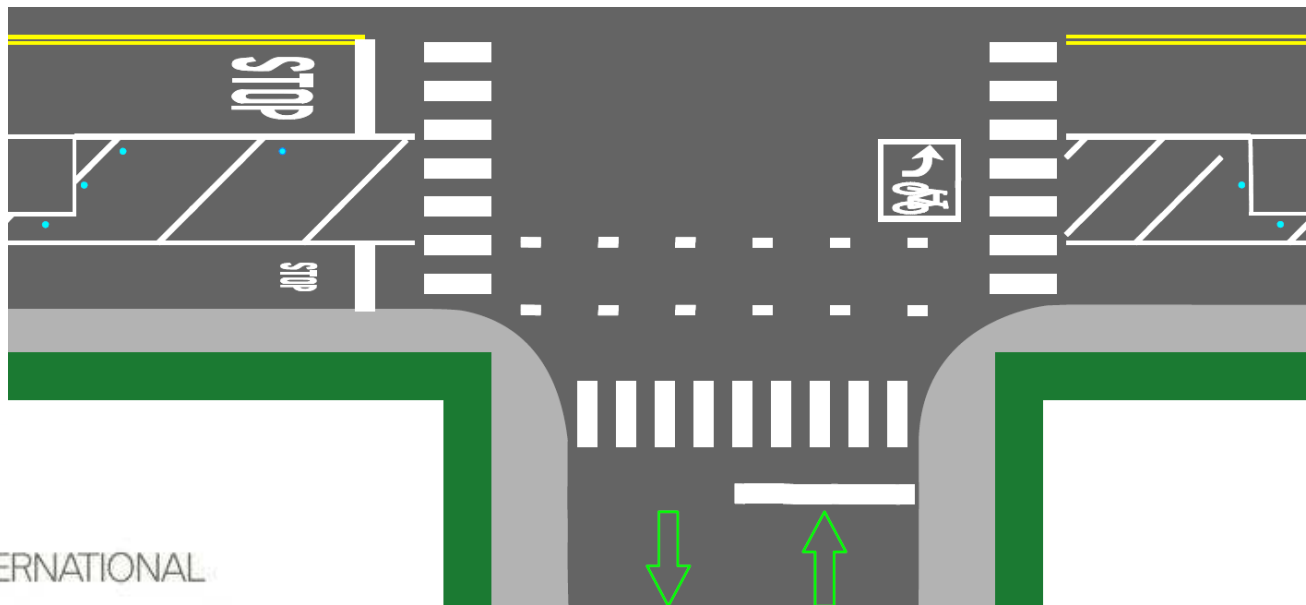
- Cyclists believe cycle tracks are safer (96%), easier (98%), more convenient (98%) and would go out of their way to ride them (93%)



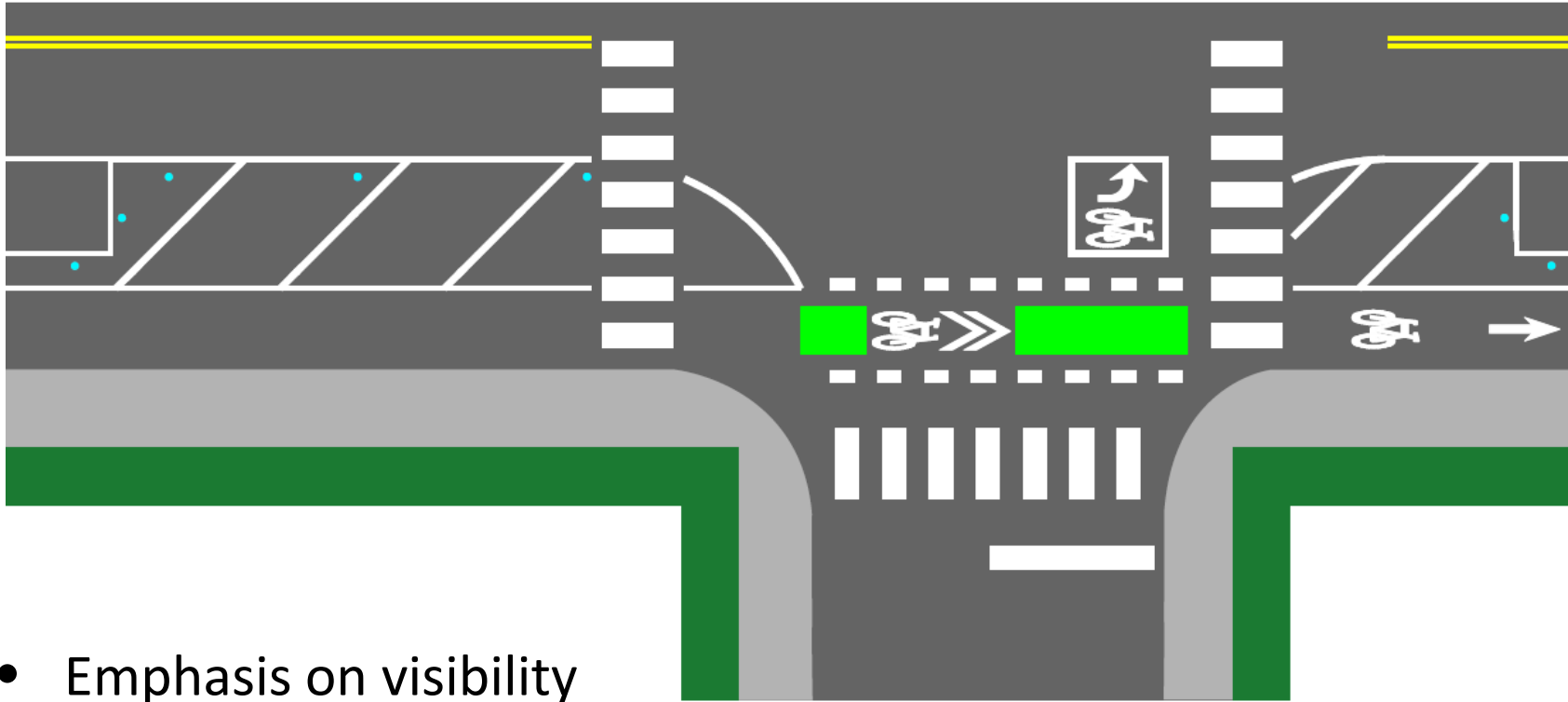
Design Details

Chicago Specific Design Standards

- Taking guidance from NACTO to create detailed design standards
- Cites other guidelines/standards
- Facilitates faster review
- Makes designs transferable

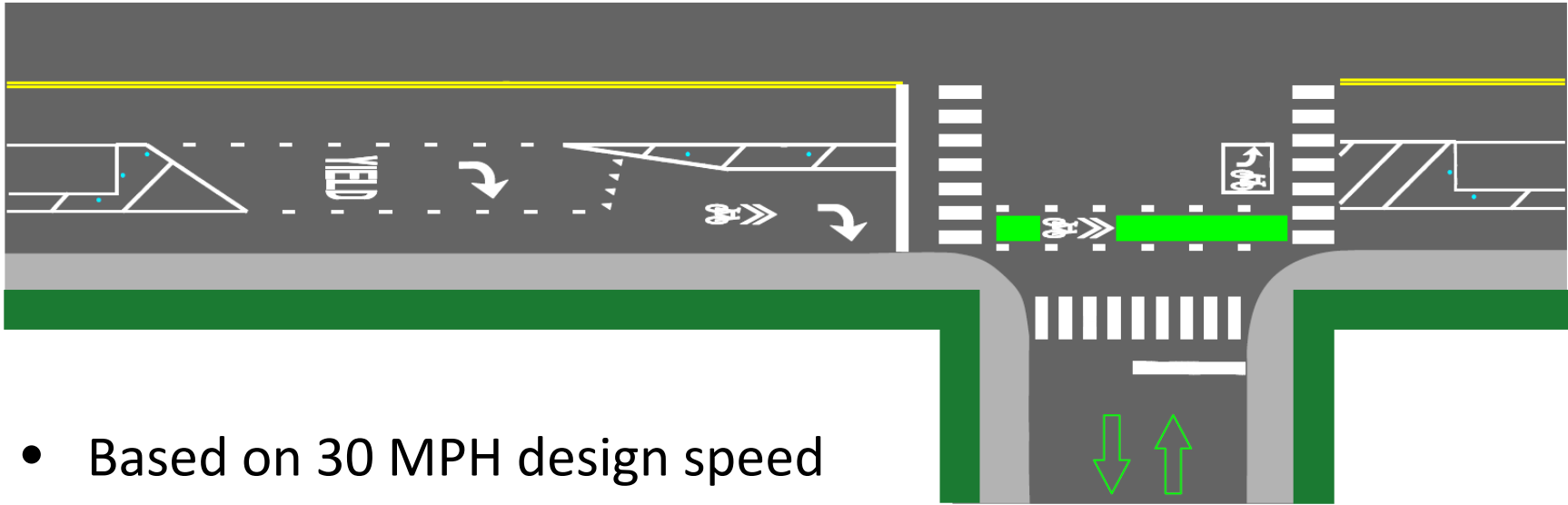


Design Details – Driveways & Side Streets



- Emphasis on visibility
- No existing guidance for right turn from major street
- 10 MPH SSD at Driveways
- 15 MPH SSD at Intersections

Design Details – Mixing Zones



- Based on 30 MPH design speed
- 10 MPH deceleration in travel lane
- 20 MPH entry speed (1:7 taper)
- 14' wide shared turn lane – space for side by side at entry
- Encourages single file operations through intersection
- Geometric elements comply with 2011 AASHTO Green Book

Design Details – Mixing Zones

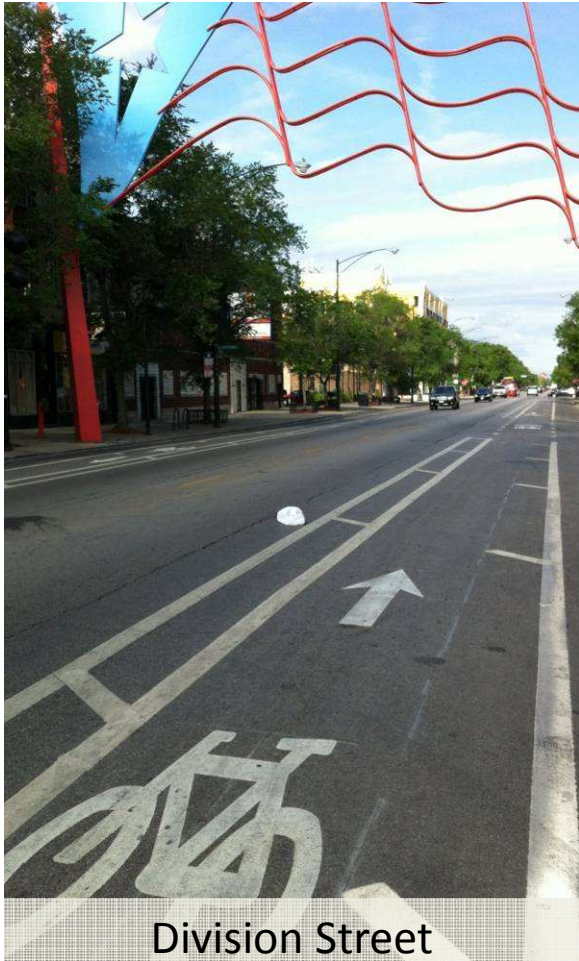


Desplaines Street, Chicago



Grand Street, NYC

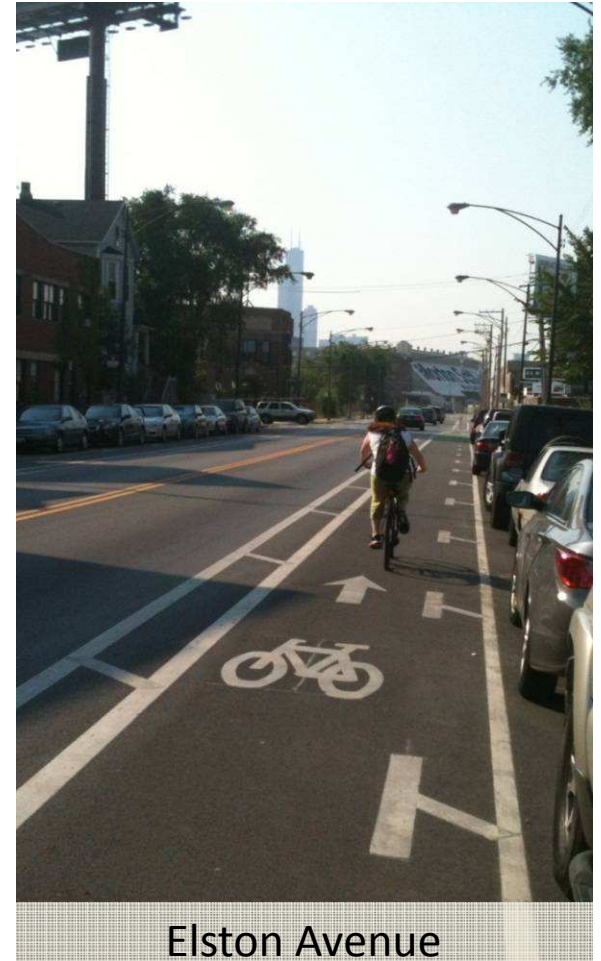
Buffered Bike Lanes



Division Street



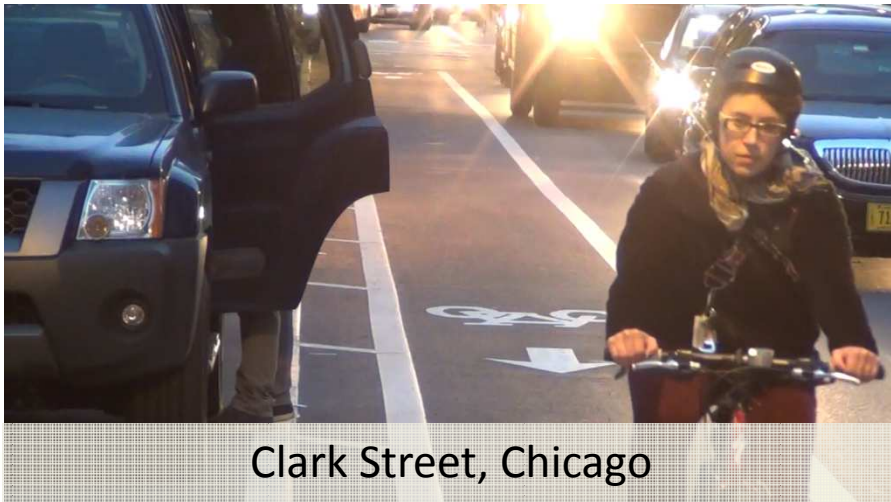
Halsted Street



Elston Avenue

Buffered Bike Lanes

- Encourages proper lateral positioning
 - Motorists park closer to curb
 - Bicyclists ride outside door zone (85% - early findings)
 - Greater shy distance between moving motorists and cyclists
- Better sightlines on roadways with numerous driveways and alleys



Clark Street, Chicago



Halsted Street, Chicago

Neighborhood Greenways

- Low volume residential street that encourages bicycling and pedestrian activity
- Conducive to bicyclists and pedestrians of all ages and abilities
- Accomplished using traffic calming, pavement markings, signage and intersection crossings treatments
- Minimize cut through motor vehicle traffic, but does not prohibit it



Intersections & Green Pavement



Bike Boxes



Two Stage Turn Queue Boxes

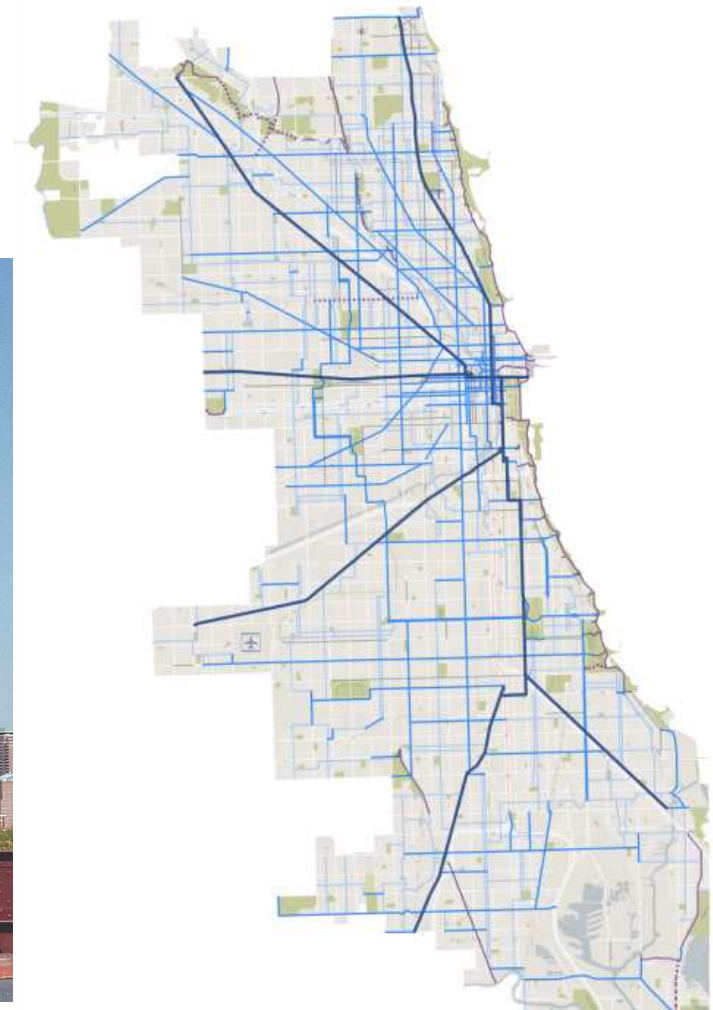


Intersection Markings

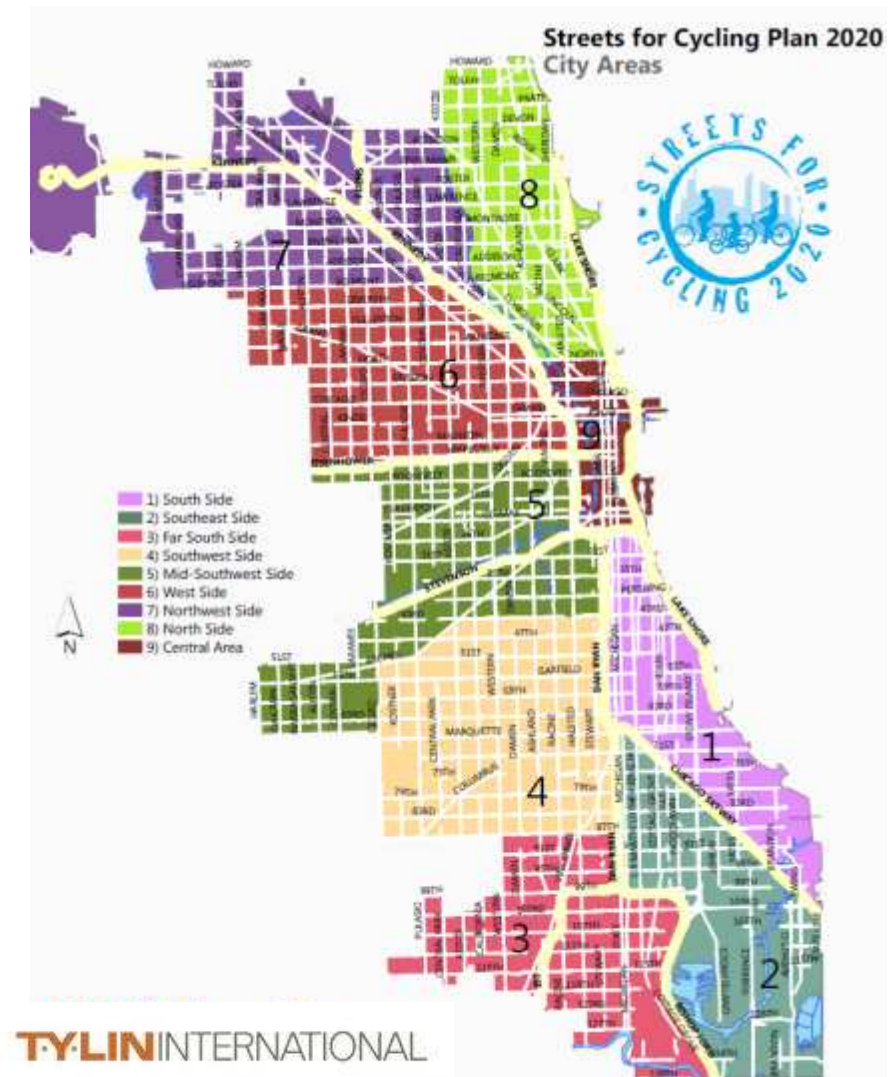
Streets for Cycling Plan 2020

Citywide plan creating a world-class network of bike facilities that are safe and comfortable for all Chicagoans

- Released in December 2012
- Over 600-mile network of Neighborhood Bike Routes, Crosstown Bike Routes, and Spoke Routes
- Bike facility within ½ mile of every Chicagoan



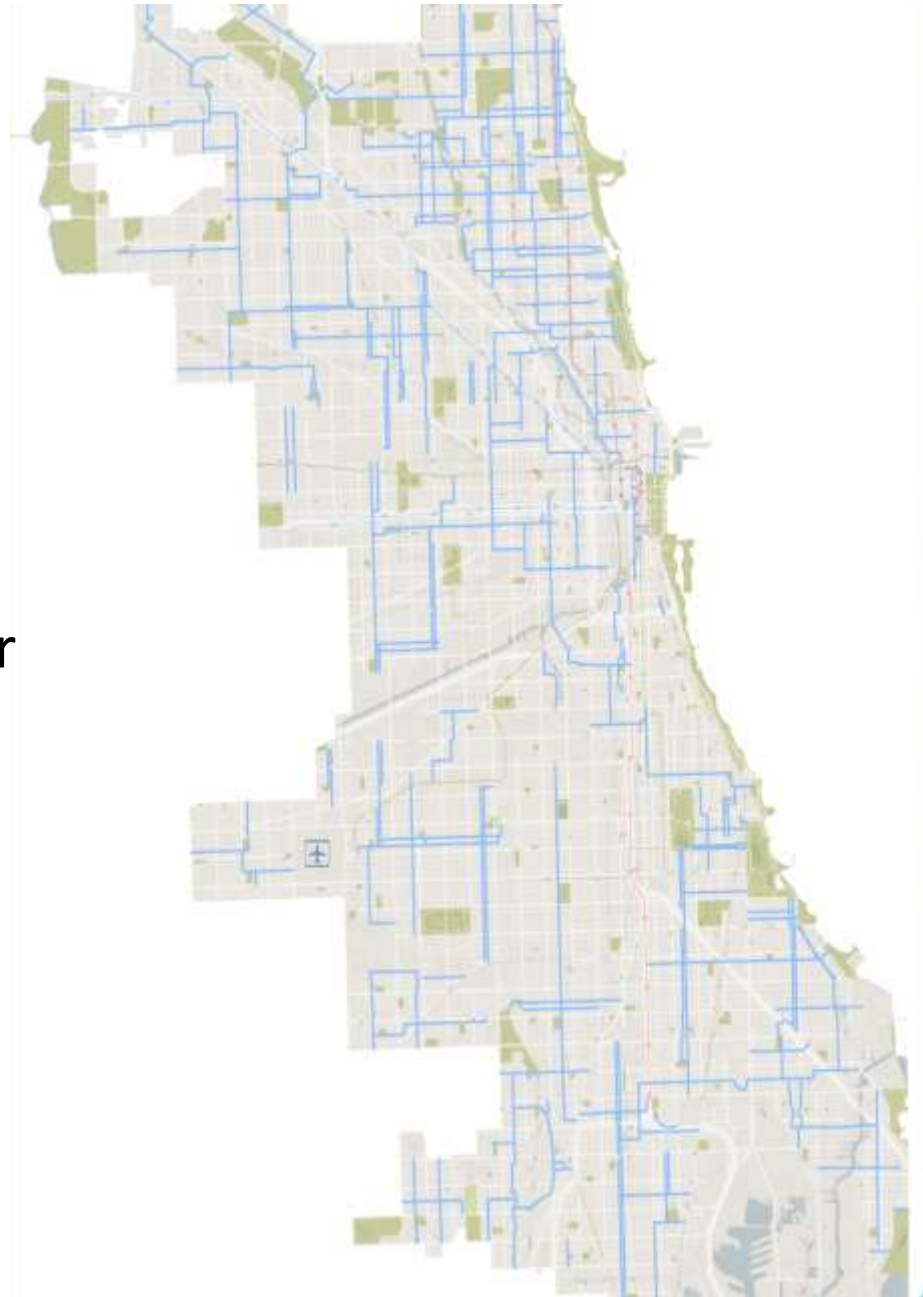
Worked with the Neighborhood Experts



Neighborhood Bike Routes

- Residential streets
- Connects parks, schools, transit, neighborhood retail and residential areas
- Neighborhood greenways or conventional bike lanes preferred
 - Design determined through outreach/implementation

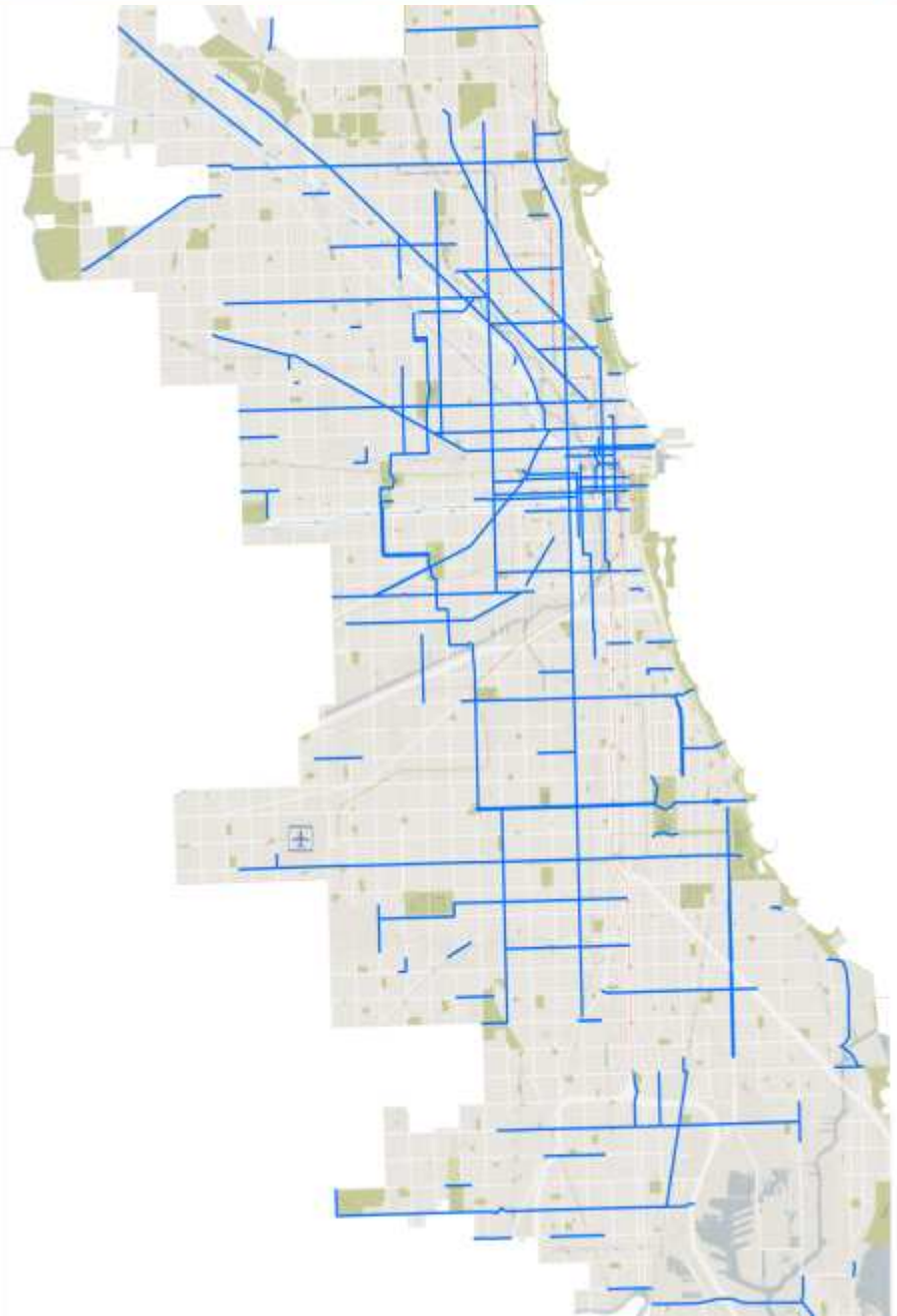
320 Miles of Neighborhood Bike Routes



Crosstown Bike Routes

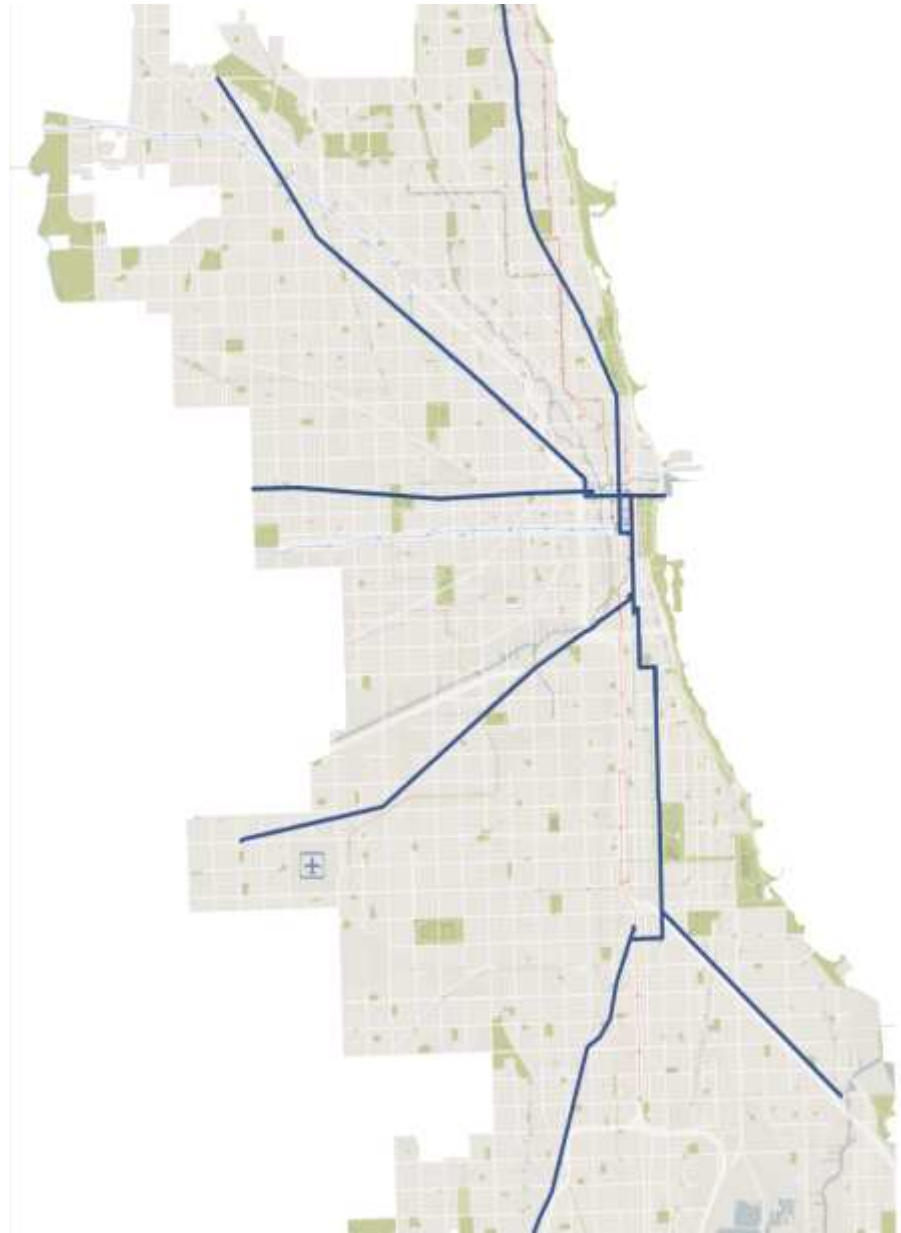
- Long, continuous routes
- Commercial streets
- Connecting neighborhoods
- Cycle tracks or buffered bike lanes preferred
 - design determined through outreach/implementation

260 Miles of Crosstown Bike Routes



Spoke Routes

- Connect edges of city to Loop from all directions
 - Clark Street
 - Milwaukee Avenue
 - Lake Street
 - Archer Avenue
 - State Street
 - Vincennes Avenue
 - South Chicago Avenue



Kinzie Street: Chicago's First Cycle Track



- 55% increase in bicyclists post-construction
- Approximately 50% of a.m eastbound traffic is bikes
- Little to no increase in motor vehicle travel times
- Still a work in progress



Kinzie Street: Chicago's First cycle Track



- Education/enforcement events
- Design additions

Kinzie Street: Chicago's First Cycle Track

Bicyclists

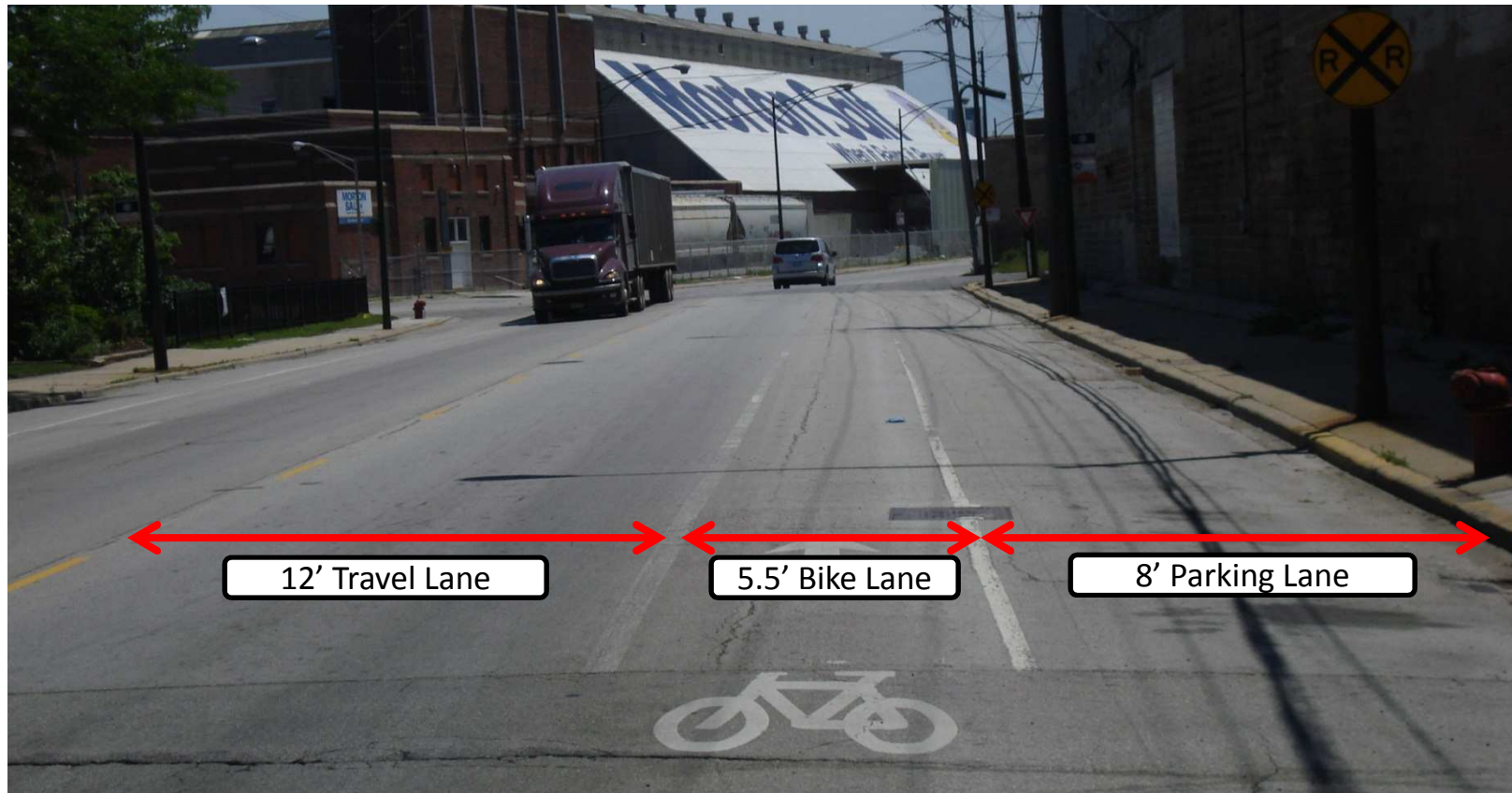
- Dooring crashes eliminated
- Intersection crashes up
- Mitigation efforts

Pedestrians & Motorists

- Crashes down

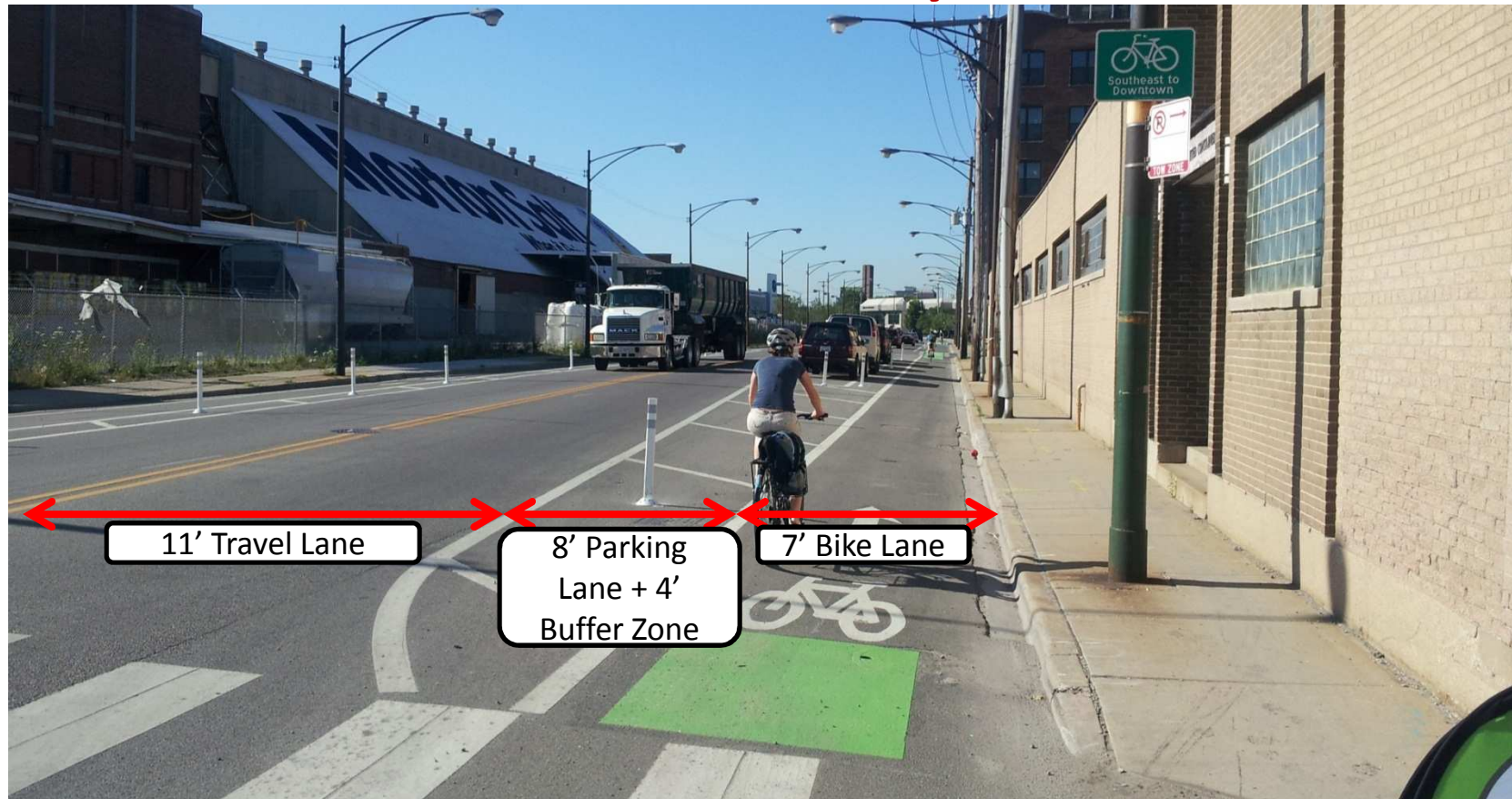


Elston Avenue – Existing Conditions



- Industrial Corridor
 - 21% truck traffic
- 14,500 motorists/day
- 150 bicyclists during peak hours
- Lightly Used Parking
- High Speed Traffic
 - 5% motorists > 40mph

Elston Avenue – Cycle Track



- Roadway Resurfaced in 2012
- Increased ridership
 - 220 bicyclists in peak hours
- Parking consolidation for cycle track
- Reduced speeds
 - Average speeds reduced by 4mph
 - % of motorists speeding reduced by 13%

Elston Avenue – Buffered Bike Lane



- Parking study showed on-street parking heavily used
- Different land uses - driveways
- Buffer on both sides of the bike lane
- Use of green pavement
- Continental crosswalks

55th Street – Existing Conditions

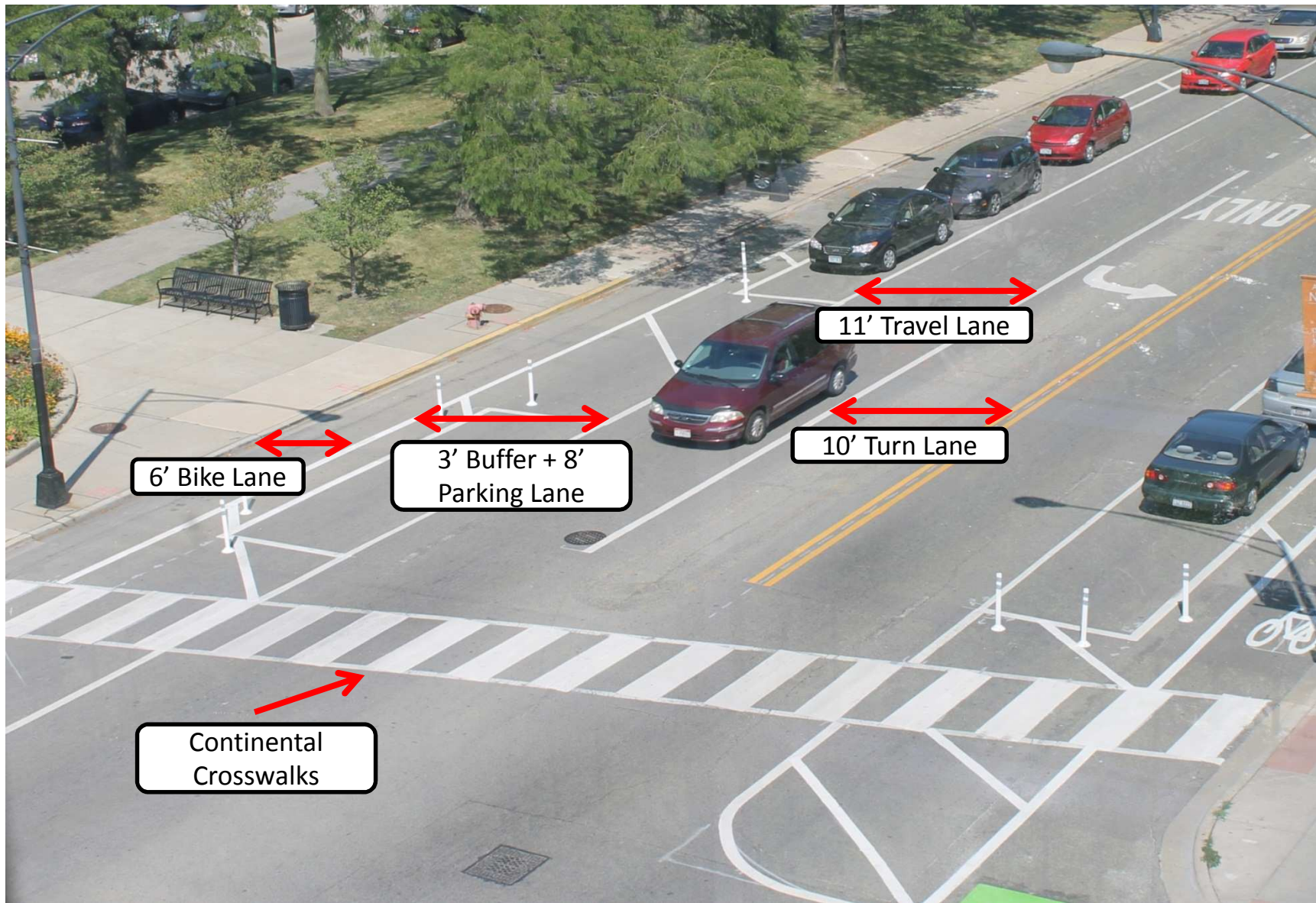


55th Street – Existing Conditions



- 13,500 motorists/day
- 26% of motorists speeding
- Popular bus route
- Poorly marked crosswalks
- No bike accommodations
- No left turn lanes at several intersections

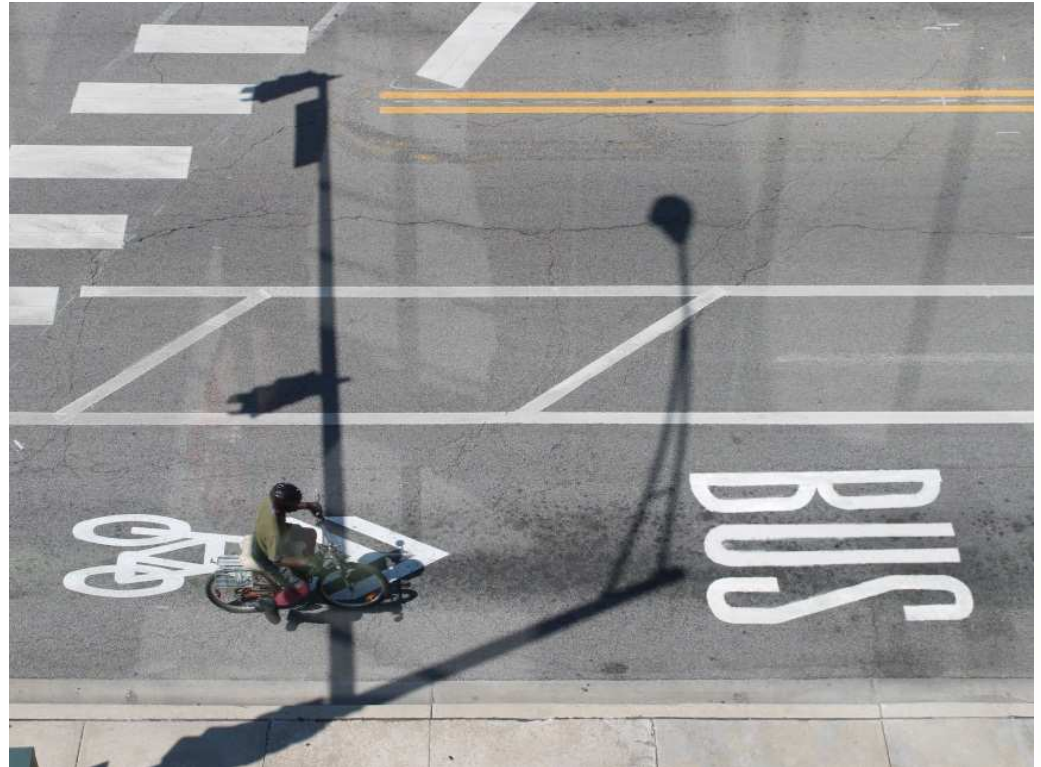
55th Street – Road Diet



55th Street – Road Diet

Transit Coordination

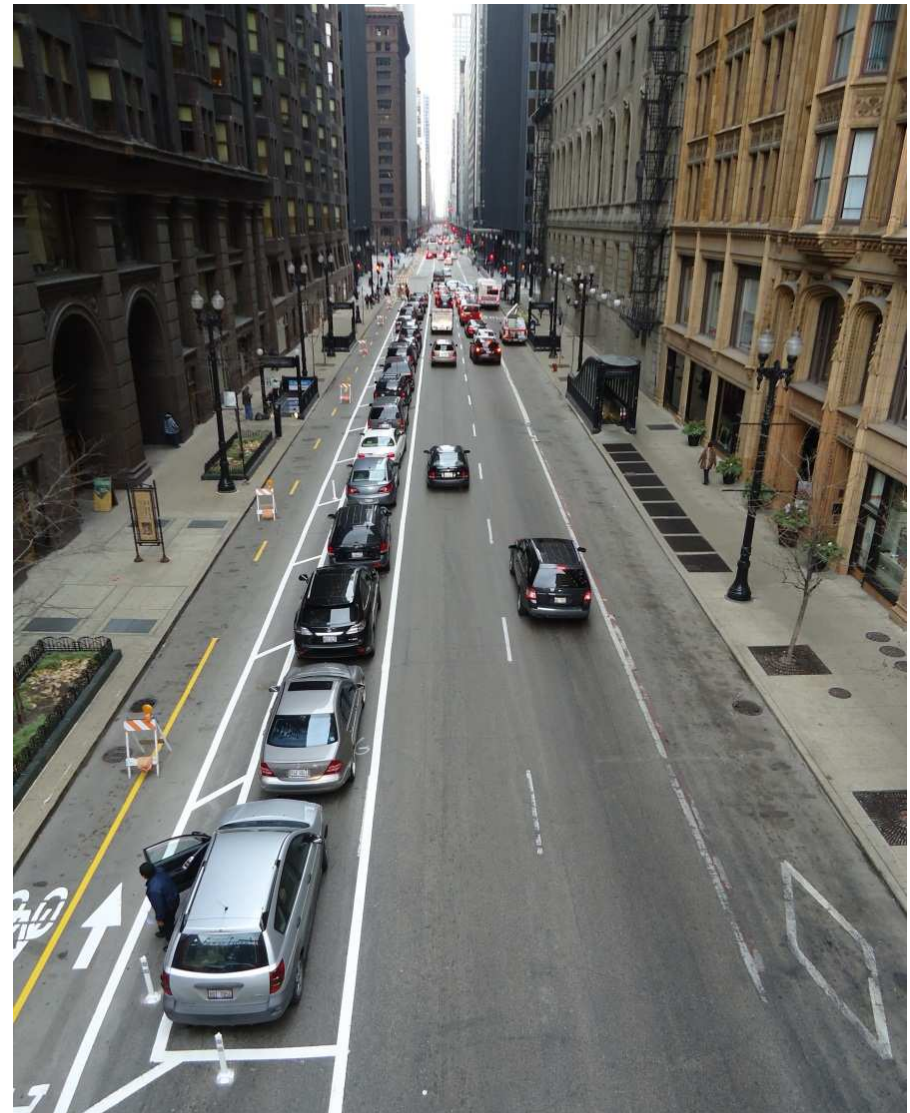
- Shared bike/bus area
- Far side bus stops whenever possible
- Extended taper lengths for buses to pull to curb
- Bus platform ideal



Dearborn Street Complete Street



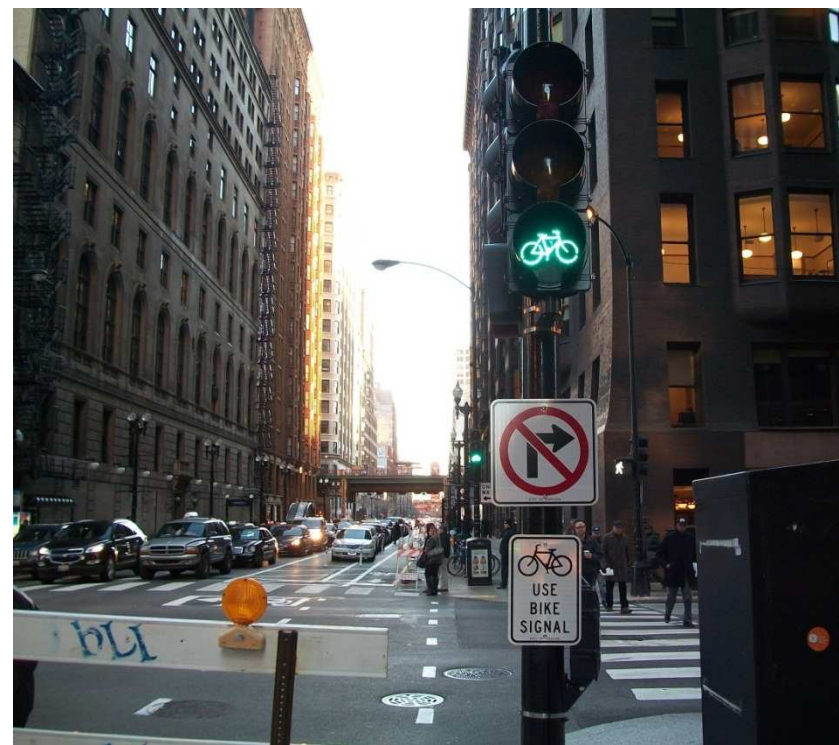
Dearborn Street - Before



Dearborn Street - After

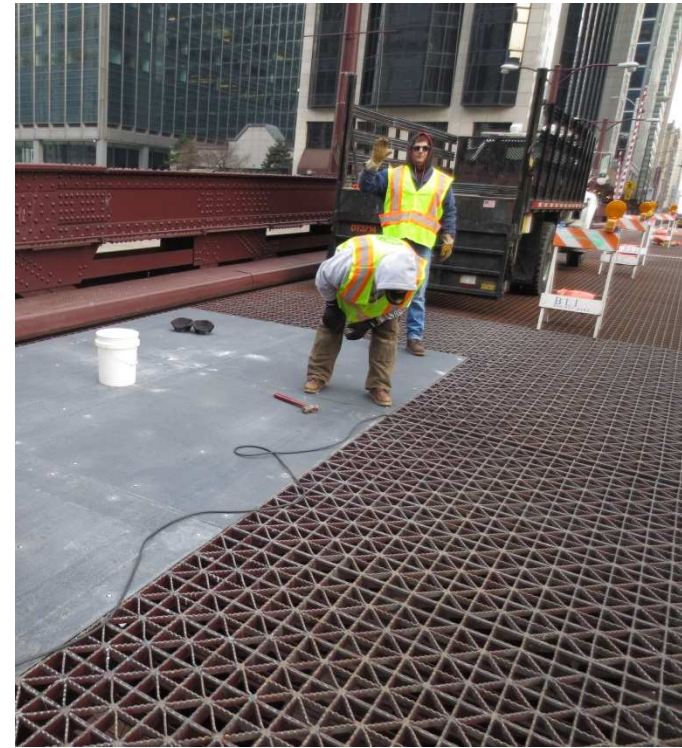
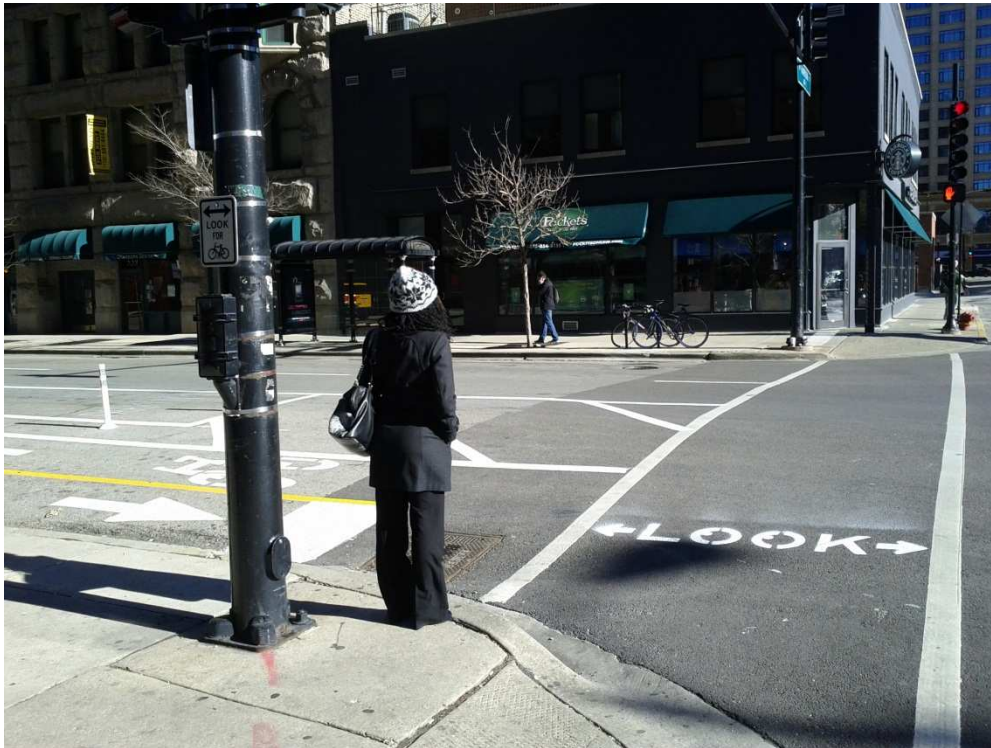
Dearborn Street Complete Street

- Bike lane adjacent to turn lane (no mixing)
- Phase separation to eliminate conflicts
- Supplementary signage
- FHWA Request to Experiment



Dearborn Street Complete Street

- Special features to alert pedestrians
- Bicycle-friendly bridge treatments
- Permanent installation this spring



Milwaukee Avenue Spoke Route

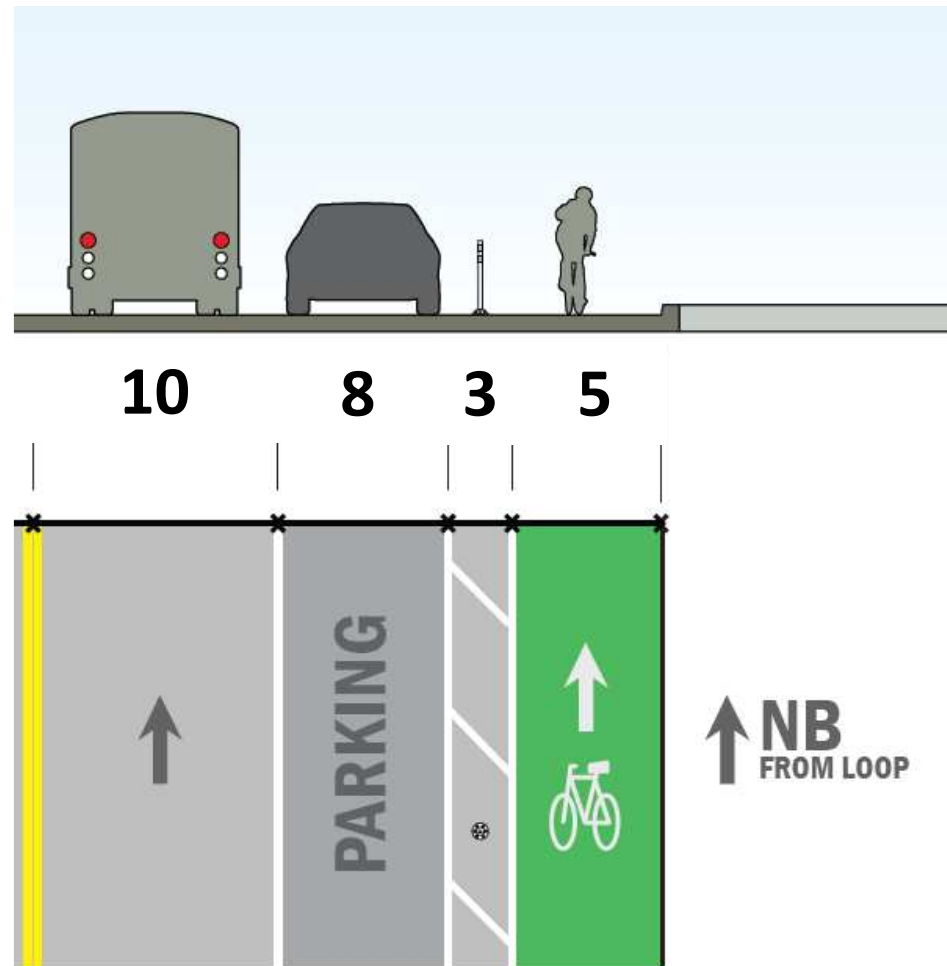


- 5,000+ bicyclists/day
- 52' roadway
- Complex intersections
- Numerous driveways



Milwaukee Avenue Spoke Route

- NACTO minimums vs. designing for all users



Moving Forward – Proving the Benefits



- Safety and use data
- Business impacts
- Partnerships and collaboration with others

green  lane
PROJECT



Questions?



Thank You!

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